Claims

1. Method for transferring data according to an ARQ method,
whereby data is transferred from a transmitter (1) to a receiver (2) in the form of data packets,
whereby at least one repeat data packet is transferred to the receiver (2) by the transmitter (1) after transmission of a data packet, if a corresponding request is issued by the receiver (2),
whereby the bits to be transferred in the data packet or repeat data packet are subjected to bit rate adaptation before they are transferred from the transmitter (1) to the receiver (2),
and whereby bit rate adaptation models to be used for bit rate adaptation, in particular parameters required for calculation of the same, are signaled between the transmitter (1) and the receiver (2),
whereby a distinction is made between self-decoding and non-self-decoding data packets, and - in at least one of these cases - several different bit rate adaptation models are signaled.

2. Method according to Claim 1,
characterized in that
the differentiation according to self-decoding and non-self-decoding data packets is signaled only in the case of puncturing, but not in the case of repetition.

3. Method for transferring data according to an ARQ method,
whereby data is transferred from a transmitter (1) to a receiver (2) in the form of data packets,
whereby at least one repeat data packet is transferred to the receiver (2) by the transmitter (1) after transmission of a data packet, if a corresponding request is issued by the receiver (2),

whereby the bits to be transferred in the data packet or repeat data packet are subjected to bit rate adaptation by puncturing or repetition before they are transferred from the transmitter (1) to the receiver (2),

whereby the bit rate adaptation is carried out according to a bit rate adaptation model,

whereby the bit rate adaptation model, in particular parameters for calculating the bit rate adaptation model, is signaled between the transmitter (1) and the receiver (2),

whereby - if bit rate adaptation is by puncturing - a signal is sent between the transmitter (1) and the receiver (2) to indicate whether the data packet is self-decoding or non-self-decoding.

4. Method according to Claim 3,

whereby - if bit rate adaptation is by repetition - no signal is sent between the transmitter (1) and the receiver (2) to indicate whether a data packet is self-decoding or non-self-decoding.

5. Method according to Claim 4,

whereby the transmission resource used in the case of puncturing in order to signal whether a self-decoding or non-self-decoding data packet is being transferred, is used in the case of repetition to signal the bit rate adaptation model, in particular parameters for calculating the bit rate adaptation model, between the transmitter (1) and the receiver (2).

6. Method according to one of the above claims,

whereby - in at least one of these cases - several different bit rate adaptation models are signaled.

7. Method according to one of the above claims,

characterized in that

the total number of possible signaled bit rate adaptation models for self-decoding or non-self-decoding data packets in the case of puncturing is the same as the number in the case of repetition.

8. Method according to one of the above claims, characterized in that in cases of puncturing, one bit is provided for indicating a self-decoding or non-self-decoding data packet and n-1 bits are provided for indicating different bit rate adaptation models, and, in cases of repetition, n bits are provided for indicating different bit rate adaptation models.

9. Method according to one of the above claims, characterized in that 2 bits are provided in cases of puncturing, and 3 bits are provided in cases of repetition, for indicating different bit rate adaptation models.

10. Method according to one of the above claims, whereby different bit rate adaptation models are used for bit rate adaptation of the data packet and the repeat data packet, so that bits with an identical information source are transferred from the transmitter (1) to the receiver (2) after bit rate adaptation is carried out at different places in the data packet and in the repeat data packet.

11. Method according to one of the above claims, characterized in that, for the purpose of bit rate adaptation, the bits of a channel-coded bit stream are divided into several partial bit streams (A-C), and the individual partial bit streams (A-C) are each subjected to a separate bit rate adaptation process, whereby the bits of the individual partial bit streams (A-C) are combined with one another

again after the corresponding bit rate adaptation for the data packet or repeat data packet has been carried out.

12. Method according to one of the above claims, characterized in that the bits of the individual partial bit streams (A-C) are combined with one another proportionately after the corresponding bit rate adaptation for the data packet or repeat data packet has been carried out.

13. Method according to one of the above claims, characterized in that the bit rate adaptation model used for the repeat data packet is modified compared to the bit rate adaptation model used for the data packet, in that when a QAM modulation of the bits to be transferred is carried out, bits with identical information content are mapped with regard to the repeat data packet onto different points in the QAM signal area than for the originally transmitted data packet.

14. Method according to one of the above claims, characterized in that bit rate adaptation is carried out with the aid of a bit rate adaptation algorithm, which punctures or repeats the bits of the data packet or repeat data packet depending on the value of a corresponding rate adaptation parameter (e_{ini}), whereby the value of the rate adaptation parameter (e_{ini}) is modified for the bit rate adaptation of the bits in the repeat data packet compared to the bit rate adaptation of the bits in the data packet.

15. Method according to Claim 14 characterized in that

the bit rate adaptation algorithm is designed such that it selects the bits to be punctured or repeated using an error variable (e), whereby said error variable (e) is initialized with the value of the rate adaptation parameter (e_{ini}) at the start of the rate adaptation algorithm.

16. Method according to one of the above claims, characterized in that, when several repeat data packets are requested by the receiver (2) for bit rate adaptation of the bits in the individual repeat data packets, different bit rate adaptation models are used.

17. Device for transferring data according to an ARQ method, whereby data is transferred from the device (1) to a receiver (2) in the form of data packets, whereby the device (1) is designed such that, after transmission of a data packet, said device transfers at least one repeat data packet to the receiver (2) if a corresponding request has been issued by the receiver (2), and whereby the device (1) has a bit rate adaptation unit (19) for applying bit rate adaptation to the bits to be transferred in the data packet or repeat data packet, characterized in that the device (1) with the bit rate adaptation unit (19) is designed such that bit rate adaptation models to be used for bit rate adaptation, in particular the parameters required for calculation of the same, are signaled from the transmitter (1) to the receiver (2), whereby a distinction is made between self-decoding and non-self-

decoding data packets, and - in at least one of these cases - several different bit rate adaptation models are signaled.

18. Device according to Claim 17,
characterized in that
the differentiation according to self-decoding and non-self-decoding data packets is signaled only in the case of puncturing, and not in the case of repetition.

19. Device for transferring data according to an ARQ method,
whereby data is transferred from the device (1) to a receiver (2) in the form of data packets,
whereby the device (1) is designed such that, after transmission of a data packet, at least one repeat data packet is transferred to the receiver (2) if a corresponding request has been issued by the receiver (2),
such that the bits to be transferred in the data packet or repeat data packet are subjected to bit rate adaptation by puncturing or repetition, before they are transferred from the device (1) to the receiver (2),
such that the bit rate adaptation is carried out according to a bit rate adaptation model,
such that the bit rate adaptation model, in particular parameters for calculation of the bit rate adaptation model, is signaled between the device (1) and the receiver (2), and
such that, in the case of bit rate adaptation by puncturing, a signal is sent between the transmitter (1) and the receiver (2) to indicate whether a self-decoding or non-self-decoding data packet is being transferred.

20. Device according to Claim 19,
characterized in that,

in the case of bit rate adaptation by repetition, no signal is sent between the device (1) and the receiver (2) to indicate whether a self-decoding or non-self-decoding data packet is being transferred.

21. Device according to Claim 20,
characterized in that
the transmission resource which is used in the case of puncturing to signal whether a self-decoding or non-self-decoding data packet is being transferred, is used, in the case of repetition, to signal the bit rate adaptation model, in particular parameters for calculating the bit rate adaptation model, between the device (1) and the receiver (2).

22. Device according to one of Claims 17 to 21,
characterized in that
different bit rate adaptation models are used for bit rate adaptation of the bits in the repeat data packet and for bit rate adaptation of the bits in the data packet, so that bits with an identical information source are transferred from the device (2) to the receiver (2) after bit rate adaptation is carried out at different places in the data packet and repeat data packet.

23. Device according to one of Claims 17 to 22,
characterized in that
the bit rate adaptation unit (19) includes a bit separation unit (20) for separating the bits in a channel-coded bit stream into several partial bit streams (A-C), separate bit rate adaptation units (21 - 23) allocated to the individual partial bit streams (A-C), in order to subject the individual partial bit streams (A-C) to a separate bit rate adaptation process, and a bit collection unit

(24) for combining the bits from the individual partial bit streams (A-C) produced by the individual bit rate adaptation units (21-23).

24. Device according to one of Claims 17 to 23,
characterized in that
the device (1) is designed for executing the method according to one of Claims 1 - 13.

25. Receiver (2) for receiving data transferred in the form of data packets according to an ARQ method,
characterized in that
the receiver (2) is designed for receiving and evaluating a data packet or repeat data packet transferred according to the method described in one of the Claims 1 - 16 or 26, in order to determine the information content of the data packet by evaluating together the bits received in the data packet and in the repeat data packet.

26. Method for transferring data according to an ARQ method,
whereby data is transferred from a transmitter (1) to a receiver (2) in the form of data packets,
whereby at least one repeat data packet is transferred to the receiver (2) by the transmitter (1) after transmission of a data packet, if a corresponding request is issued by the receiver (2),
whereby the bits to be transferred in the data packet or repeat data packet are subjected to bit rate adaptation by puncturing or repetition before they are transferred from the transmitter (1) to the receiver (2),
whereby the bit rate adaptation is carried out according to a bit rate adaptation model,
whereby the bit rate adaptation model, in particular parameters for calculating the bit rate adaptation model, is signaled between the transmitter (1) and the receiver (2),

whereby the data packet is transferred according to a QPSK modulation or a higher-value modulation, in particular a 16-QAM modulation or 8-PSK modulation,

whereby a mapping rule for the mapping of bits in the data packet to modulation symbols, and especially parameters for describing the mapping rule, is signaled between the transmitter (1) and the receiver (2) only in the case of a higher-value modulation, whereby signaling resources are used for this purpose, which are used in the case of QPSK modulation for signaling the bit rate adaptation model, and especially parameters for calculating the bit rate adaptation model.